AAM Community Integration Working Group Kickoff

Questions and Answers:

Conference.io

Web Address:

https://arc.cnf.io/sessions/t5am/#!/dashboard

AAM Community Integration Working Group Kickoff Agenda

- CIWG KickOff (30 minutes)
  - Welcome
  - Introduction NASA WG Lead
  - UAM Ecosystem
  - High-level overview of Community Integration WG (CIWG) content/roadmap
  - Discuss path forward for WG
  - WG Logistics
- Panel Discussion, including Q&A (1:20 minutes)
- Closing (10 minutes)

Vehicle Develop & Production

Government: FAA/AIR, DoD
Standards: ASTM, RTCA, SAE, EUROCAE, ICAO

Aircraft Developers

- AeroVironment
- AirspaceX/Mobi
- Alakia Technology
- Ampaire
- Apex Unmanned
- Armada Aero
- ASX
- Bell
- Beta Technologies
- Boeing/Aurora
- Boeing/HorizonX
- Carter Aviation
- Elroy Air
- EsaAero
- FanFlyer
- General Atomics
- Google X
- Hap Car
- Hi-Lite Aircraft
- Intel ventures
- Jetoptera
- Joby
- Jaunt Air Mobility
- Jump Aero
- Karem Aircraft
- Kittyhawk
- Piasecki
- Opener
- Overair
- Robodub
- Sikorsky
- Synergy Aircraft
- Textron
- The Spaceship Co
- TLG Aerospace
- Trimble
- Trumbull Unmanned
- Valkyrie Systems Aero
- Volta Volare'
- Wisk
- Workhorse/Surefly
- XTI Aircraft
- Zipline
- Airbus/A3 (I)
- Aeromobile (I)
- Daprato Machine (I)
- eHang (I)
- Embraer (I)
- Hanwha Systems (I)
- Hyundai (I)
- Leap (I)
- Lilium (I)
- Pipistrel (I)
- Rolls-Royce (I)
- Terrafugia (I)
- VARCO (I)
- Varon (I)
- Vimana (I)
- Volocopter/Intel (I)

Subsystems: Airframe & Propulsion

- Electric Power Systems
- ES Aero
- GE Aviation
- LaunchPoint
- MAGicALL
- S-RAM Dynamics
- Thin Gap
- United Technologies
- VerdeGo Aero
- Emrax (I)
- Rolls Royce (I)
- magniX (I)
- Siemens (I)
- Safran (I)

Manufacturing

- Boeing
- Ford
- GM
- Airbus (I)
- Honda (I)
- Hyundai (I)
- Nissan (I)
- Siemens (I)

Individual Vehicle Management & Ops

Government: FAA/AIR/AFS
Standards: ASTM, RTCA, SAE, EUROCAE, ICAO

Integrated Automation & Aircraft Operations

- Autonodyne
- Bell Helicopter
- Boeing/Aurora/Jeppeson
- Cavan Solutions
- Evo-Luz
- Joby
- Kittyhawk
- Mosaic ATM
- Nodelin Robotics
- Plank Aerosystems
- Sikorsky
- Uber
- Verizon/Skyward
- Xwing
- Zaphod
- A3 (I)
- Drone Employee (I)
- Skyy Network (I)
- Terafugia (I)
- Third Space Auto (I)

Subsystems: Flight Automation

- Aspen Avionics
- Avidyne Corporation
- Dynon Avionics
- Echodyne
- Garmin
- GE Aviation Systems
- Genesys Aerosystems
- Honeywell/Bendix King
- Iris Automation
- Near Earth Autonomy
- Rockwell Collins
- Sandel Avionics
- TruTrak Flight Systems
- UTRC
- Vigilant Aerospace
- BAE (I)

(I) – International

Airspace System Design & Implementation

Government: FAA/AIR/ATO
Standards: RTCA, ICAO

Airspace Design

- A6I
- Airmap
- ANRA
- Crown
- GE/AiROXS
- Harris
- Lockheed
- M2C Aerospace
- Metron
- MITRE
- Onesky
- Skyward
- XAirSky
- A3 (I)

Flight Procedures Development

- Boeing/Jeppeson
- Hughes Aerospace
- Leidos
- Wolf UAS
- Global Airspace Solutions (I)

Vertiport Design

- Burns and McDonnell
- Gannette Fleming
- HeliExperts
- Near earth autonomy
- Uber Elevate
- WSP

Subsystems: CNS

- ARINC
- Astronautics
- AT&T
- Circonia
- Clear-Com
- Echodyne
- Fortem
- GE Aviation
- Gogo
- Gryphon/SRC
- Higher ground
- Honeywell
- L3/ACUS
- NextNav
- Primal Systems
- R3
- Raytheon
- SageTech
- SARA
- Sierra Nevada
- SmartSky Networks
- Skyward
- TTTech
- UTRC
- Verizon
- XWing
- BAE Systems (I)
- ParaZero (I)
- RADA Sensor (I)
- Thales (I)

Air Traffic & Fleet Operations Management

Government: FAA/ATO, DOC, DoD, DHS
Standards: RTCA, ICAO

Traditional ATM Suppliers

- ATAC Corporation
- GE/AiROXS
- General Dynamics
- Harris
- Jet Blue Tech Vent
- Lockheed
- M2C Aerospace
- Microsoft
- NeXt (Boeing)
- SparkCognition
- PASSUR Aerospace
- Raytheon
- Rockwell
- Thales (I)

UAM ATM Providers

- AirMap
- AGI (OneSky)
- ANRA Technologies
- Avision
- CACI Technologies
- Collins
- GE/AiRXOS
- Metron
- Onesky
- PrecisionHawk
- Skyward/Verizon
- Simulyze
- Uber Elevate
- UTRC
- UAS Sidekick
- WSI
- TruWeather
- XM WX
- Unifly (I)
- ATECH S/A (I)

Data Service Suppliers

- CalAnalytics
- Climacell
- Ellis
- GeoRq
- Sabre
- Stellar Labs
- Kugelair Flight Svc
- Personal Airline Exchange
- Skyward/Verizon
- Sustain Avia Found
- Uber Elevate
- A3 (I)
- EmbraerX (I)
- Sumitomo Corp (I)

Fleet Operations

- AGI
- Amazon Prime Air
- Blade Helicopter
- Boeing/Horizon X
- Boeing/Jeppesen
- Collins
- Drop Drone
- FedEx
- IBM
- KittyHawk

UAM Range Test Sites

- Arizona Commerce Authority
- Choctaw Nation (OK)
- Deseret UAS Test Site (UT)
- Kansas State University
- SOAR UAS Test Site (OR)
- University of Maryland UAS Test Site
- FAA Test Sites: Alaska Center for UAS Integration, Lone Star Center UAS of Excel and Innov, Mid-Atlantic Avia Partnership

Community Integration

Local/National

Decision Makers (Local)

- Mayors/City Councils/Boards of Supervisors
- Tribal Councils
- Departments of Transportation
- Departments of Commerce
- National League of Cities (2000+ cities, 49 states with additional cities)
- Port Authority (of various big cities)
- US Conference of Mayors
- National Governors Association

Decision Makers (National)

- US Congress
- DOT/FAA – AIR, AFS, ATO
- DOC/NTIA (public/federal spectrum)
- FCC (commercial spectrum)
- DHS
- DOJ/FBI

Government (Federal)

- NASA
- National Academies-Transportation Research Board
- National Institutes of Standards and Technologies (NIST)/Smart Cities
- National Transportation Safety Board (NTSB)

Incubators/Investors

- Alliance Texas
- Defense Innovation Experimental (DUIx)
- FAA/IPP: Choctaw, San Diego, IEIA (VA), KS DoT, Ft Myers (FL), Memphis Airport (TN), NC DoT, ND DoT, Reno (NV), UAF (Fairbanks, AK), LA DoT, WA DoT
- Starburst
- Strategic Alliances Resources Network (StarNet)
- Sustainable Aviation Limited
- Uber

Associations (Domestic)

- American Association of Airport Executives (AAAE)
- American Insurance Association
- Aircraft Owners and Pilots Assoc (AOPA)
- Community Air Mobility Initiative (CAMI)
- Chambers of Commerce
- Commercial Drone Alliance
- Coalition of UAS Professionals

National/International

Decision Makers (International)

- US Congress
- DOT/FAA – AIR, AFS, ATO
- DOC/NTIA (public/federal spectrum)
- FCC (commercial spectrum)
- European Aviation Safety Agency (EASA)
- European Organization for Civil Aviation Equipment (EUROCAE) (Europe)

Standards

- American Society for Testing and Materials (ASTM) (I)
- National Fire Protection Association
- Radio Technical Commission for Aeronautics (RTCA) (I)
- Society of Automotive Engineers (SAE) (I)
- International Civil Aviation Organization (ICAO) (I)

Government (Intranational)

- Civilian Aviation Authority (CAA-UK)
- German Aerospace Center (DLR)
- Japan Aerospace Exploration Agency (JAXA)
- Korea Aerospace Research Institute (KARI)
- Netherlands Aerospace Center (NLR)
- ONERA (French Aerospace Center)
- Nordic Network for Electric Aviation (NEA)

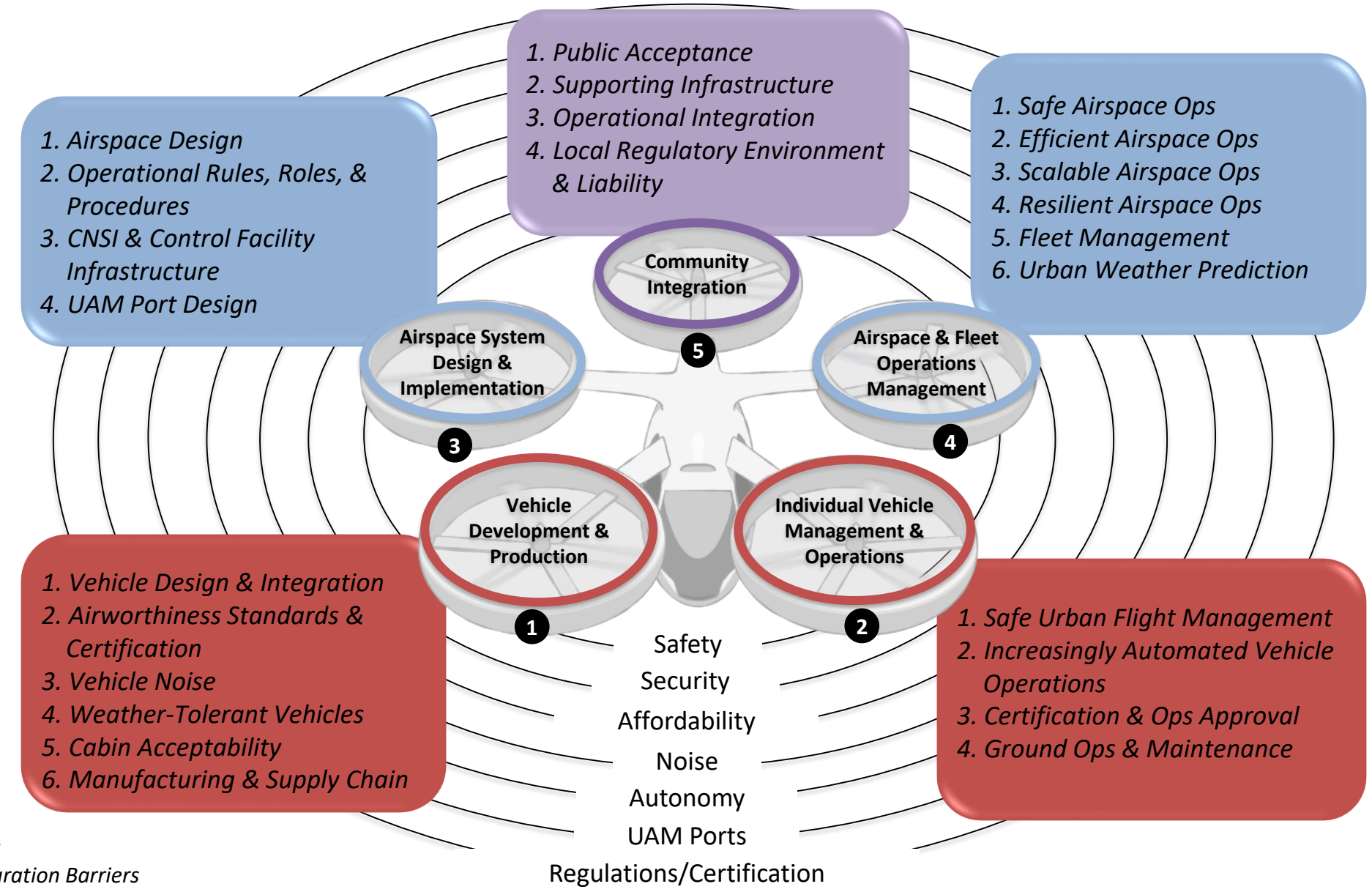
Contributors (International)

- International Forum for Aviation Research (IFAR)

Associations (International)

- American Institute of Aeronautics and Astronautics (AIAA)
- Airports Council International (ACI)
- Association of Air Medical Services
- Association for Unmanned Vehicle Systems International (AUVSI)
- Civil Air Navigation Services Organization (CANSO) – ANSP providers
- Environmental (Greenpeace, WWF)
- Eurocontrol (Europe)
- General Aviation Manufacturers Association (GAMA)
- International Air Transport Association (IATA) - Airlines
- International Telecommunication Union (ITU)

UAM Framework and Barriers

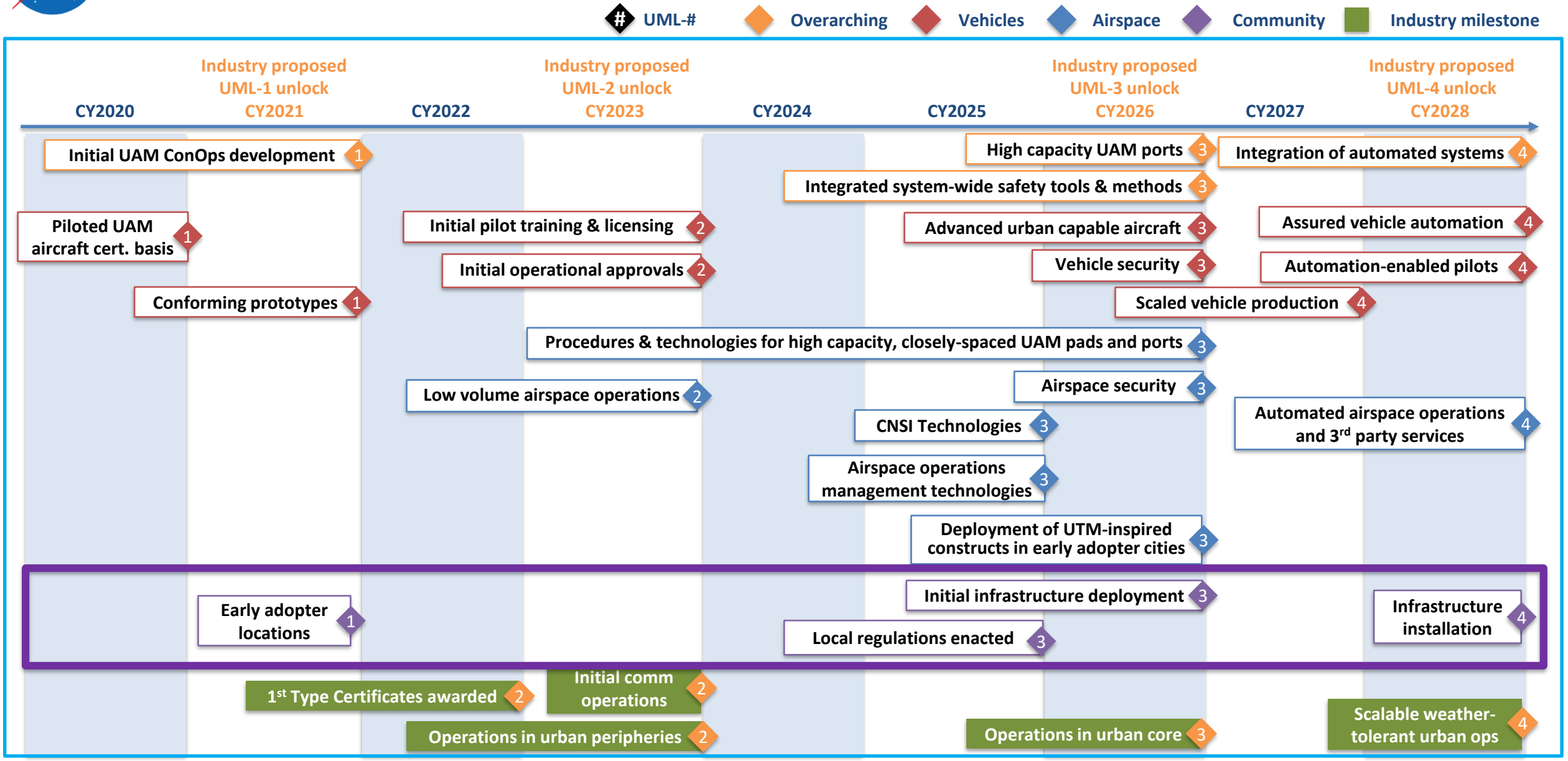


Vehicle Barriers
Airspace Barriers
Community Integration Barriers
 # Pillar number

UAM Pillar 5: Community Integration

Category	Pillar	Barrier	Description of Operational Objective that solves barrier
3 Community Integration	5 **Community Integration** *Achieve public acceptance of UAM vehicle operations in and around metropolitan areas by addressing UAM-related social concerns such as safety, security, affordability, noise, privacy, and legality.*	**Public Acceptance**	• Achieve public acceptance of the UAM concept by overcoming concerns over issues such as safety, non-user risk exposure, security, affordability, effects of increasing autonomy, noise, and privacy as well as a lack of consensus on the public value proposition of UAM.
		Supporting Infrastructure	• Develop and implement the required supporting infrastructure for integrating UAM operations into metropolitan areas, including UAM Ports, energy infrastructure, and test ranges.
		Operational Integration	• Implement multi-mode transportation integration and address operations-related community impacts, including passenger/cargo security, protection from malicious use of vehicles and denial of service attacks, and graceful degradation of the transportation ecosystem in reaction to disruption of UAM services.
		Local Regulatory Environment & Liability	• Enact laws and regulations for governing UAM operations, such as zoning, privacy, and noise, striving for consistency across operating locations (i.e., states, municipalities) and develop a framework for the analysis of liability associated with the development and operation of increasingly automated and autonomous systems.

Representative industry proposed UAM timeline[1] and milestones



1 Based on a range of publicly available industry projections; not a consensus view; aggressive

Milestone definitions (1/3)

Overarching | Vehicles | Airspace | Community | Industry milestone

	Milestone	Definition
UML 1	UAM CONOPS development	The **initial concept of operations** for UAM is defined and implemented. The CONOPS is **reviewed and revised as needed** to suit evolving technology, system needs, and demands
	Piloted UAM certification basis	**Certification pathways are charted**, and associated **regulations and standards** for the **type certification of piloted UAM aircraft** are developed
	Conforming prototypes	**UAM vehicle prototypes** are developed that **conform to the requirements defined by the piloted UAM certification basis**
	Early adopter cities	Initial evaluation of the **positions of state and local governmental officials and stakeholders** and an assessment of **public opinion** is complete for candidate cities for early UAM adoption
UML 2	Initial pilot training & licensing standards	**Requirements, standards, and training programs** are implemented for piloting UAM vehicles
	Part 135 operator standards	**Operator standards**, similar to those in **Part 135**, are implemented for **UAM fleet operators and flight service providers**
	Low volume flight procedures	**Procedures and airspace systems** are in place to **support low volume UAM operations in the urban periphery** (e.g., traffic management, weather services, contingency management, etc.)
	1st Type certificates awarded	The **first type certificate for a piloted UAM aircraft** is awarded
	Commercial operations	**Commercial, passenger carrying UAM operations** begin
	Operations in urban periphery	**Commercial operations in urban peripheries** begin

Path forward for WG

Proposed overview of CIWG efforts

- Informational
  - » Stakeholder identification
  - » Educational information
  - » Community Events – Conferences and Meetings
- Addressing CI barriers
  - » Milestones
  - » Existing or planned efforts
  - » Initiating effort(s) to address existing gaps

Stakeholders

Government (Federal)

- NASA
- National Academies-Transportation Research Board
- National Institutes of Standards and Technologies (NIST)/Smart Cities
- National Transportation Safety Board (NTSB)

Incubators/Investors

- Alliance Texas
- Defense Innovation Experimental (DUIx)
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- Aircraft Owners and Pilots Assoc (AOPA)
- Community Air Mobility Initiative (CAMI)
- Chambers of Commerce
- Commercial Drone Alliance
- Coalition of UAS Professionals
- Environmental Groups (e.g. Sierra Club)
- Experimental Aircraft Association (EAA)

Community Integration

Local/National

Decision Makers (Local)

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- Tribal Councils
- Departments of Transportation
- Departments of Commerce
- National League of Cities (2000+ cities, 49 states with additional cities)
- Port Authority (of various big cities)
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- Association of Air Medical Services
- Association for Unmanned Vehicle Systems International (AUVSI)
- Civil Air Navigation Services Organization (CANSO) – ANSP providers
- Environmental (Greenpeace, WWF)
- Eurocontrol (Europe)
- General Aviation Manufacturers Association (GAMA)
- International Air Transport Association (IATA) - Airlines
- International Telecommunication Union (ITU)
- Joint Authorities for Rulemaking on Unmanned Systems (JARUS)
- Vertical Flight Society (AHS)

Education & Informational

Advanced Air Mobility in Rural Areas & Beyond" featuring Anna Dietrich (CAMI) and Darrell Swanson
https://www.youtube.com/watch?v=-cYnsTN04DY

CAMI Resources Library https://www.communityairmobility.org/resources

VFS Virtual Workshop on eVTOL Infrastructure
https://vtol.org/events/virtual-workshop-on-evtol-infrastructure

ACI-NA Airport Economic Impact Study https://airportscouncil.org/intelligence/economic-impact-study/

AAM Ecosystem Working Groups Virtual Meetings https://nari.arc.nasa.gov/aamecosystem

Upcoming Conferences & Meetings

	Webinar	Agility Prime Kickoff	US Air Force	4/27 - 5/1	Virtual	N/A	https://agilityprime.com/index.html
	Meeting (External)	ASTM F44 Meetings (28-30) [Note workshop on 4/27 canceled]	ASTM	Virtual 4/28-4/30	Was Prague, now virtual		https://www.astm.org/MEETINGS/filtrexx40.cgi?+-P+MAINCOMM+F44+futuremeetings_maincomm.frm
	Conference	Aviation Week MRO America	Aviation Week	Moved to Sept 1-3 (was 4/27-4/30)	Dallas, TX	USA	https://mroamericas.aviationweek.com/en/conference/about-the-conference.html
	Conference	Aviation Week UAM Americas	Aviation Week	CANCELED (was 4/27-	Dallas, TX	USA	https://uam.aviationweek.com/en/home.html
	Webinar	Virtual Workshop on eVTOL Infrastructure Part 3 - Acoustics and Noise	VFS	29-Apr	Virtual	N/A	https://vtol.org/events/virtual-workshop-on-evtol-infrastructure
		2020 EUROCAE Symposium	EUROCAE	Canceled (was 4/29-	Geneva, Switzerland	Switzerland	https://www.eurocae.net/events/eurocae-symposium-2020/#pos_4564
May	Webinar	Virtual Workshop on eVTOL Infrastructure Part 4 - Urban / Municipality Planning & Land Use	VFS	6-May	Virtual	N/A	https://vtol.org/events/virtual-workshop-on-evtol-infrastructure
	Conference	AUVSI XPONENTIAL 2020	AUVSI	Postponed to Aug 10-12	Boston, MA	USA	https://www.xponential.org/xponential2020/public/enter.aspx
	Conference	More Electric Aircraft USA Conference	MEA	Postponed to Sept (was	Washington D.C.	USA	https://www.iqpc.com/events-more-electric-aircraft-usa-d-c/
	Conference	ATCA Tech Symposium	ATCA	Postponed to Dec (was	Atlantic City, NJ	USA	https://www.atca.org/TechSymposium
	Meeting (Internal)	NASA MBSE CoP Meeting and SE Workshop??	NASA	Week of May 18	Near MSFC	USA	
	Conference	VFS Forum 76	VFS	Postponed to Oct 6-8 (Was	Montreal, Quebec	Canada	https://vtol.org/annual-forum/forum-76
June	Conference	Smart Cities Expo Atlanta	Smart City Expo World Congress	Postponed to TBD dates	Atlanta, GA	USA	https://smartcityexpoatlanta.com/
	Conference	EVS33 (World Electric Vehicle Symposium & Exposition)	Electric Drive Transportation Association	Canceled (was 6/14-	Portland, OR	USA	https://evs33portland.org/
	Conference	AIAA Aviation Forum and Expedition	AIAA	6/14-6/19	Virtual (was Reno, NV)		https://www.aiaa.org/aviation
	Conference	FAA UAS Symposium	AUVSI	6/16-6/19	Baltimore, MD	USA	http://faauas.auvsi.net/faa2020/attend
	Conference	2020 MBSE Cyber Experience Symposium	No Magic	6/21-6/24	Allen, TX	USA	https://mbsecyberexperience2020.com/
	Conference	AC377 Autonomy in Aviation Symposium	ASTM	6/30/2020	Washington, DC (Washington Marriott Wardman Park)	USA	
July	Event	EAA AirVenture	EAA	7/20-7/26	Oshkosh, WI	USA	https://www.eaa.org/en/airventure
August	Conference	AUVSI XPONENTIAL 2020	AUVSI	8/10-8/12 (tentative)	Boston, MA	USA	https://www.xponential.org/xponential2020/public/enter.aspx
	Conference	AIAA/IEEE Electric Aircraft Technologies Symposium (EATS)	AIAA/IEEE	8/26-8/28	New Orleans, LA	USA	https://www.aiaa.org/propulsionenergy/program/eats

Red text shows postponed or cancelled events (due to COVID-19). Green text shows virtual events

Community Integration Milestones

Existing or Planned Efforts

Acoustics Technical and UAM Noise Working Groups (UNWG)
Spring 2020 Meeting https://evt.grc.nasa.gov/atwg-spr2020/
POCs: Steve Rizzi s.a.rizzi@nasa.gov & Dennis Huff dennis.l.huff@nasa.gov

NIST Global City Teams Challenge, Smart and Secure Cities and Communities Challenge- A Guidebook from the Cybersecurity and Privacy Advisory Committee (CPAC) Public Working Group
https://pages.nist.gov/GCTC/uploads/blueprints/2019_GCTC-SC3_Cybersecurity_and_Privacy_Advisory_Committee_Guidebook_July_2019.pdf

Community Integration Working Group

NASA Community Integration Working Group Lead:

Nancy Mendonca
Nancy.Mendonca@nasa.gov

Community Integration Working Liasion:

NAME
EMAIL

NASA Aeronautics Research Institute (NARI) Project Lead:

Richard Walsh
Richard.walsh@nasa.gov

NARI AAM PORTAL:

In Work

Community Integration Working Group Calendar of Events 2020

- **May Events**
  - Community Integration Working Group Kickoff meeting – Today
  - Aircraft Working Group kickoff meeting - TBD

- **June Events**
  - UAM Concept of Operations (ConOps) Overview – June 25th 1:30-3:00 EDT
  - ConOps, Aircraft Pillars – June 26th 1:30-3:00 EDT

- **July Events**
  - Con Ops, Airspace Pillars – TBD
  - ConOps, Community Pillar – July 10th, 1:00-2:30 EDT
  - Airspace Working Group Kickoff meeting - TBD

Community Integration FAQs

Panel Participants

Rex Alexander
President
Five-Alpha

Anna Mracek Dietrich
Co-Executive Director
Community Air Mobility Initiative

Chris Oswald
Senior Vice-President
Airports Council - International

Shawn Bullard
President
Duetto Group

Chris Hewlett
Specialist Leader
Deloitte Consulting

Basil Yap
Vice President
Hovecon

https://arc.cnf.io/sessions/t5am/#!/dashboard

Panel Questions

- From your perspective, can you highlight a critical community need?
- What do you see as some of the primary community integration barriers?
- Can you give an overview of a current effort working to solve a community integration barrier?
- What are your thoughts around building on the great work done by VFS, CAMI, Smart Cities and other community members?
- How do you see this group providing benefit to the community?
- How would you define “community” and or “ecosystem” in the context of the NASA Advanced Air Mobility initiative?

Upcoming Events

May Events

Aircraft Working Group Kickoff meeting – Next week (Tentative)

June Events

UAM Concept of Operations (ConOps) Overview – June 25th 1:30-3:00 EDT

ConOps, Aircraft Pillars – June 26th 1:30-3:00 EDT

Airspace Working Group Kickoff meeting – TBD

Cross Cutting Working Group Kickoff - TBD

July Events

ConOps, Community Pillar – July 10th, 1:00-2:30 EDT

ConOps, Airspace Pillars – TBD

Back-Up

Milestone definitions (2/3)

Overarching | Vehicles | Airspace | Community | Industry milestone

	Milestone	Definition
UML 3	Airspace security standards	**Policy, standards, and best practices** are developed for physical and cybersecurity relating to UAM airspace technologies and systems (e.g., CNS, traffic management)
	Procedures for high capacity, closely spaced UAM ports/pads	Procedures for **high volume UAM operations** with **high capacity, closely spaced UAM ports and pads** are implemented
	Airspace Technologies	**Technologies for safe UAM airspace operations** (e.g., communication, navigation, command and control, surveillance) are developed and **approved for operation use**
	Vehicle security standards	**Policy, standards, and best practices** are developed for physical and cybersecurity relating to operational UAM vehicles
	Advanced urban capable aircraft	**Certified next generation aircraft** are developed with **capabilities suitable for advanced urban operations**. These include **low noise**, **weather tolerance**, quick aircraft turn around time, and **suitable battery energy density**
	Initial Infrastructure deployment	**First purpose built UAM infrastructure** installations are **completed and operational**
	Local regulations enacted	**Local regulations developed by early adopter cities** are being **broadly adopted**
	Operations in urban core	**Commercial operations in urban core areas** have begun (i.e., central downtown)

Milestone definitions (3/3)

Overarching | Vehicles | Airspace | Community | Industry milestone

	Milestone	Definition
UML 4	Autonomous system integration	**Standards and best practices** are developed for the **integration of autonomous airspace and vehicle technologies** into a unified air transport operations system
	Standards and policy	**Overarching standards and policies to govern the development, testing, and operations of UAM vehicles, technologies, and systems** are developed
	Training and standards for simplified operations	**Requirements, standards, and training programs** are developed and implemented for simplified flight operations and remotely piloted UAM vehicles
	Assured vehicle autonomy	Systems and technologies that enable **autonomous vehicle operations and take into account heterogeneous vehicle operations** are **developed and approved** for operational use
	Scaled vehicle production	The manufacturing of UAM vehicles has reached **a point of critical scalability** and vehicles are **cost effective for fleet operators**
	Deployment of UTM-inspired constructs in early adopter cities	UAM **airspace systems and technologies** are widely **deployed in early adopter cities** and **support medium density operations**, serving as a model and guide for future adopter cities
	Autonomous airspace operations and 3rd party services	**Government and 3rd party technology and systems** that enable smooth autonomous airspace operations (e.g., surveillance, ATC, weather, NOTAMS, flight planning, etc.) are **developed and approved** for operational use
	Infrastructure installation	**UAM ports/pads and supporting infrastructure** are **widely deployed** and capable of **supporting scaled UAM operations**
	1st V&V of responsible automated systems	First **fully-autonomous UAM vehicle and airspace systems** are validated and verified for **reliable and responsible operation**

Nancy Mendonca, is currently the NASA ARMD portfolio manager overseeing the formulation of new projects within ARMD and a member of the ARMD headquarters office responsible for strategic analysis and resource management. She served 24 years in the Navy flying H-46 helicopters. Between the Navy and NASA she worked at the Missile Defense Agency, on the Marine Corps MRAP Program and at NTIA working on the Federal Strategic Spectrum Plan. She graduated from the U.S. Naval Academy with a B.S. in Aeronautical Engineering and subsequently eared M.S. degrees in Aeronautical Engineering and National Security and Strategic Studies. She is also a Certified Public Accountant and has currently prioritized rescuing Great Danes and riding horses over flying helicopters.